

A TAXONOMIC ACCOUNT OF *BULBOPHYLLUM* THOU. (ORCHIDACEAE) FROM BANGLADESH¹

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(With five text-figures)

Key words: taxonomy, *Bulbophyllum*, Orchidaceae, Bangladesh

The genus *Bulbophyllum* Thou. of the family Orchidaceae is represented in Bangladesh by four species including a variety, *B. neilgherrense* Wight and *B. sessile* (Koen.) J.J.S. are recorded for the first time in Bangladesh. A new variety *B. lilacinum* var. *sorocianum* Ahmed *et al.* is also reported. A Key to the species and variety has been given.

INTRODUCTION

In a wide sense there are probably 1000 species of the genus *Bulbophyllum* Thou. distributed through tropical Africa and Asia; Australia, New Zealand and S. America (Santapau and Kapadia 1966). The name *Bulbophyllum* is derived from the Greek words *bolbos* = bulb, and *phyllon* = leaf, in allusion to the bulb which bears leaf on the top (Santapau and Kapadia 1966). According to Hooker (1890) there are about 79 species under the genus present in British India. Later Grant (1895) reported 41 species from the region of Burma, adjacent to Bangladesh. On the other hand 62 species of the genus have been reported from India by Pradhan (1979). In other adjacent areas Holttum (1964) recorded 127 species from Malaya and only 11 species from Sri Lanka (Jayaweera 1981). Only two species *B. lilacinum* Ridley and *B. lobbi* Lindl. have been reported from the present Bangladesh area by Khan and Halim (1987), and Hooker (1890) from Cox's Bazar and Chittagong, respectively. This work aims at studying the genus from Bangladesh, comprising four species (including the earlier reported two species) and *B. neilgherrense* Wight and *B. sessile* (Koen.) J.J.S.. which are reported here as new records. A new variety of *B. lilacinum* var. *sorocianum* Ahmed *et al.* is also reported here

after critical study of literature (Prain 1903, Heinig 1925, Cowan 1926, Datta and Mitra 1953, Sinclair 1955).

The herbarium and live specimens are housed at the Botany Department and Orchidarium of Chittagong University, Chittagong, Bangladesh respectively.

KEY TO THE SPECIES AND VARIETY OF *Bulbophyllum*

1. Flowers solitary.....2
2. Rhizome pendulous, pseudobulbs appressed to the rhizome, pedicellate ovary \pm 1 mm long, petals \pm 1 mm long *B. sessile*
2. Rhizome creeping, pseudobulbs erect on the creeping rhizome, pedicellate ovary \pm 7.5 cm long, petals \pm 2.0 cm long *B. lobbi*
1. Flowers racemose 3
3. Raceme compact, flowers many (\pm 30) and spotted, petals entire with long cilia 4
4. Floral bracts longer than pedicellate ovary, sidelobes of lip round and toothed *B. lilacinum*
4. Floral bracts shorter or equal to the pedicellate ovary, sidelobes of lip \pm falcate and entire
.....*B. lilacinum* var. *sorocianum*
3. Raceme lax-flowered, flowers fewer (\pm 11) and unspotted, petals denticulate without cilia*B. neilgherrense*

¹ Accepted January 1993.

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ENUMERATION OF THE SPECIES

1. *B. lilacinum* Ridley, J. Linn. Soc., 32: 276 (1896); Holtum, Fl. Malaya, 1: 460 - 461 (1964); Balakrishnan and Nair, in Bull. Bot. Surv. Ind., 18 (1-4): 150-151 (1976); Khan and Halim, Bang. J. Bot., 16(2): 203 (1987). (Fig.1)

The additional identifying characters of the species given here are not mentioned by Khan and Halim (1987). The lateral lobes of the column more or less 2-toothed and acute. Pollinia 4, attached in pairs, 0.5 x 0.5 mm (combination of two), outer two larger than the inner ones, slightly curved. Stigmatic surface 1 x 0.5 mm.

Flowering scape: Early October; **Flowering time:** late October-early November; **Fruiting Time:** Unknown.

Geographical distribution: Malaya Peninsula, India and Bangladesh.

Specimen examined: Cox's Bazar district: Ukhia, Koto Palong, 20.12.1986, Ahmed 71.

2. *B. lilacinum* Ridley var. *sorocianum* Ahmed *et al.* var. nov. (Fig.2)

var. *sorocianum* Ahmed *et al.* var. nov.-varietate *lilacinum* Ridley affinis, sed different folium apice abrupte reflexum, flores bracteae breve flos in sicco pellucidus, scapus minor quam parte pseudobulbo, racemus inclino pseudobulbo et laxissimus, flore largior et cuprūm brownicum, lateribus labellum sensim falcata, entiris, acutae.

Holotypus: Lectus in Ukhia, Koto Palong, Cox's Bazar district, epiphytica die a *Syzygium fruiticosum* (Roxb.) DC. die 20.12. 1986 by Ahmed et positus in herbario die Botany Department, Chittagong University, Chittagong, Bangladesh sub numero accessionis 71 (a).

var. *sorocianum* Ahmed *et al.* var. nov.-allied to var. *lilacinum* Ridley but differing from it having leaf apex more reflexed, floral bracts shorter than the pedicellate ovary, scape less than half of the pseudobulbs, raceme inclined to pseudobulb and loose, larger flower and copper brown colour, sidelobes of lip more or less falcate, entire and acute.

Flowering scape initiation: Late September; **Flowering time:** More or less mid October-late October; **Fruiting time:** November onwards.

Holotype: Collected from Ukhia, Koto Palong, Cox's Bazar district, Epiphytic on *Syzygium fruiticosum* (Roxb.) DC. on 20.12.1986 by Ahmed and has been deposited in the Herbarium at Botany Department, Chittagong University, Chittagong, Bangladesh under accession number 71(a).

3. *B. Lobbii* Lindl., Bot. Reg. 33: sub. t. 29 (1847); Hook. f., Fl. Brit. Ind., 5: 755 (1890); Grant, Orch. Burma, 41 (1895); Holtum, Fl. Malaya, 1: 424 (1964). Syn. *B. henshallii* Lindl. in Gard. Chron., 422(1852); *B. siamense* Reichb. f. 1 c: 572(1867). (Fig.3)

Hooker (1890) added Chittagong to the plant's habitat and mentioned in his description that the petals were 9-nerved. We did not find such 9-nerved petals instead only 3-nerved forms. According to Holtum (1964) *B. lobbii* was certainly one of the finest *Bulbophyllum*, but it was not easy to grow in the low lands of Malaya. *B. lobbii* is perhaps closely allied to *B. affine*, but the scape and pedicel are distinctly longer.

Flowering scape initiation: late July; **Flowering time:** Early June-Mid June; **Fruiting time:** Unknown.

Geographical distribution: Widely distributed in Indonesia, Malaya, Burma and Bangladesh.

Specimen examined: Cox's Bazar district : Ukhia, Koto Palong, 20.12. 1986, Mokter 63.

4. *B. neilgherrense* Wight, Icon., 5(1): 6, t. 1650 (1851); Hook. f. Fl. Brit. Ind., 5: 761(1890); Santapau & Kapadia, Orch. Bombay, 195(1966); Pradhan, Ind. Orch., 2: 399(1979); Singh, Bull. Bot. Surv. Ind., 23(3 & 4): 205 (1981). Syn. *Phyllorchis neilgherrense* (Wt.) O. Kuntze, Rev. Gen. Pl.2: 677 (1891). (Fig.4)

This species has been observed by Santapau and Kapadia (1966) to be both epiphytic and lithophytic, and rarely flowers in cultivation. They noted the distinguishing odour of the flowers which probably is a great attraction for carrion flies,

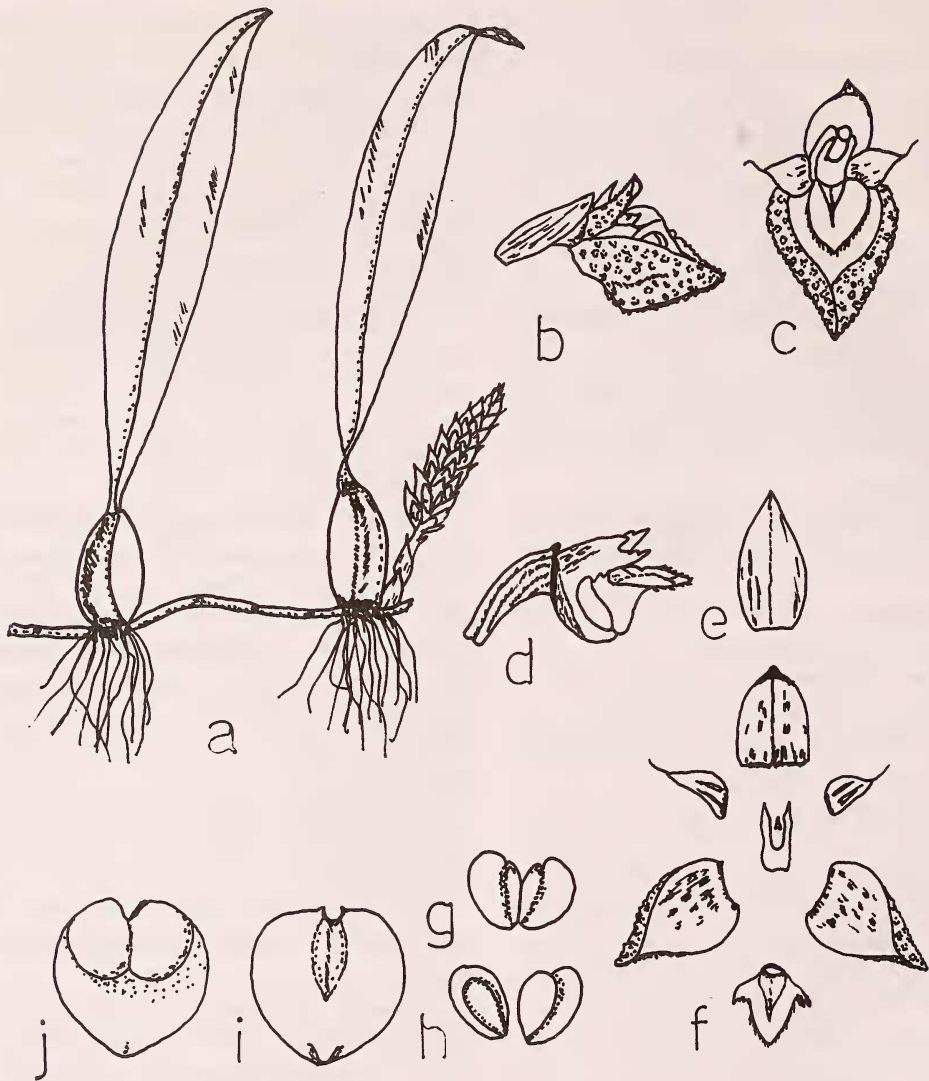


Fig. 1. *Bulbophyllum lilacinum* Ridley: (a) habit sketch with inflorescence (x ½); (b) flower from side showing bract (x ½); (c) flower from front (x 4); (d) pedicellate ovary, column, foot and lip attached from side (x 4); (e) floral bract (x 3); (f) sepals, petals, lip spreadout, and column from inside (x 3); (g) pollinia (x 20); (h) pollinia spreadout (x 20); (i) operculum from front (x 20); (j) operculum from inside (x 20).



Fig. 2. *Bulbophyllum lilacinum* var. *sorocianum* Ahmed *et al.* var. nov.: (a) habit sketch with inflorescence (x 1/2); (b) flower from side showing bract (x 3); (c) flower from front (x 4); (d) pedicellate ovary, column, foot and lip attached from side (x 4); (e) floral bract (x 3); (f) sepals, petals and lip spreadout, column from inside (x 3); (g) pollinia (x 20); (h) pollinia spreadout (x20); (i) operculum from front (x 20); (j) operculum from inside (x 20); (k) capsule (x 2).

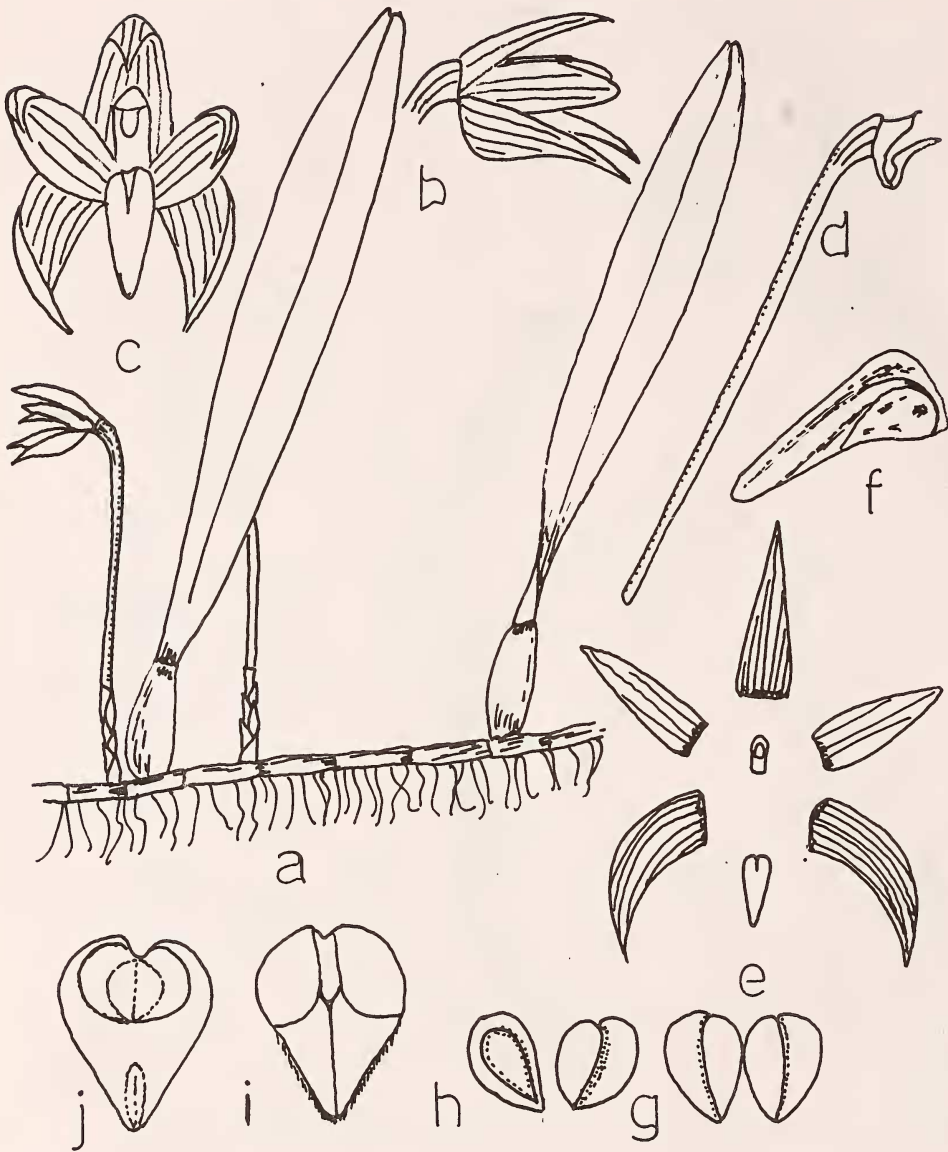


Fig 3. *Bulbophyllum lobbii* Lindl. : (a) habit sketch with scape (x 1/2); (b) flower from side (x 1); (c) flower from front (x 2); (d) pedicellate ovary, column, foot and lip attached (x 1); (e) sepals, petals, lip spreadout, and column from inside (x 1); (f) lip from semi-side (x 3); (g) pollinia (x 10); (h) pollinia spreadout (x 10); (i) operculum from front (x 10); (j) operculum from inside (x 10).

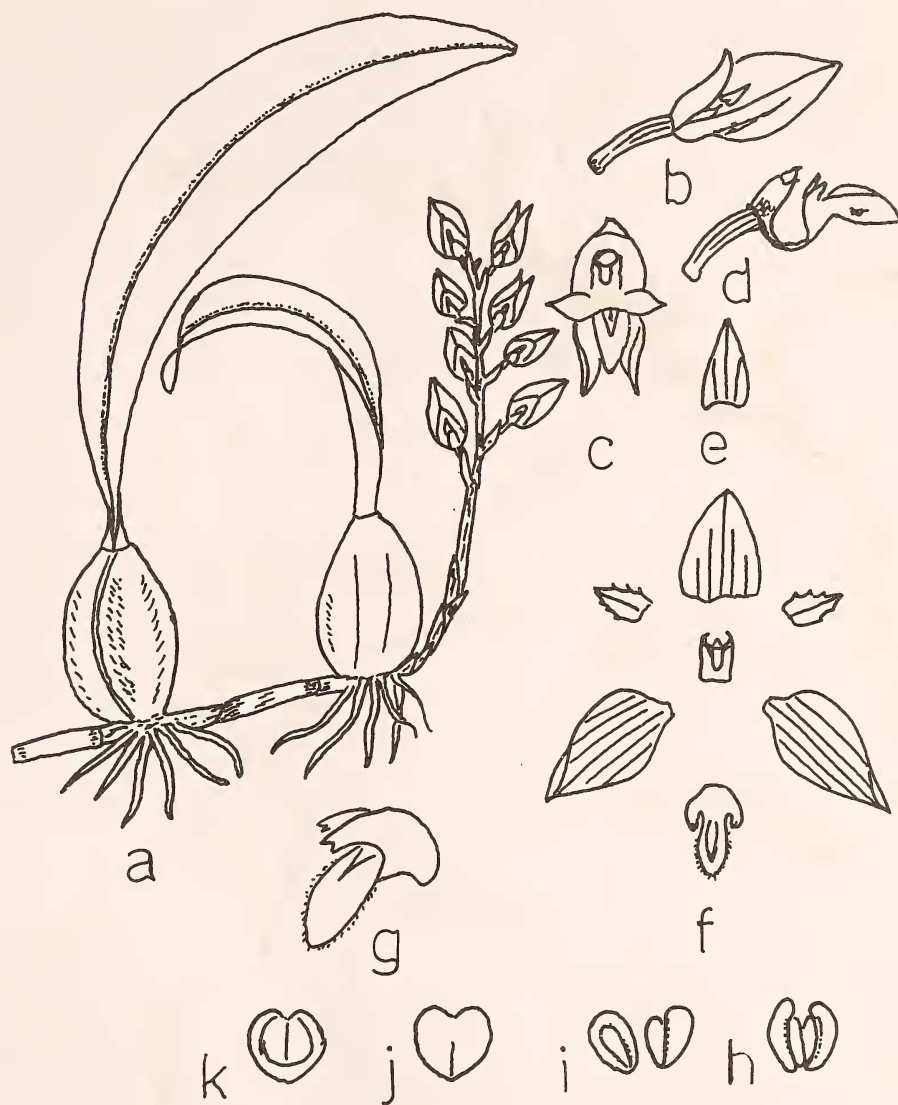


Fig 4. *Bulbophyllum neilgherrense* Wight: (a) habit sketch with inflorescence (x 1); (b) flower from side (x 2); (c) flower from front (x 2); (d) pedicellate ovary, column and lip attached from side (x 2); (e) floral bract (x 2); (f) sepals, petals, lip spreadout, and column from inside (x 2); (g) lip from semi side (x 5); (h) pollinia (x 10); (i) pollinia spreadout (x 10); (j) operculum from front (x 10); (k) operculum from inside (x 10).

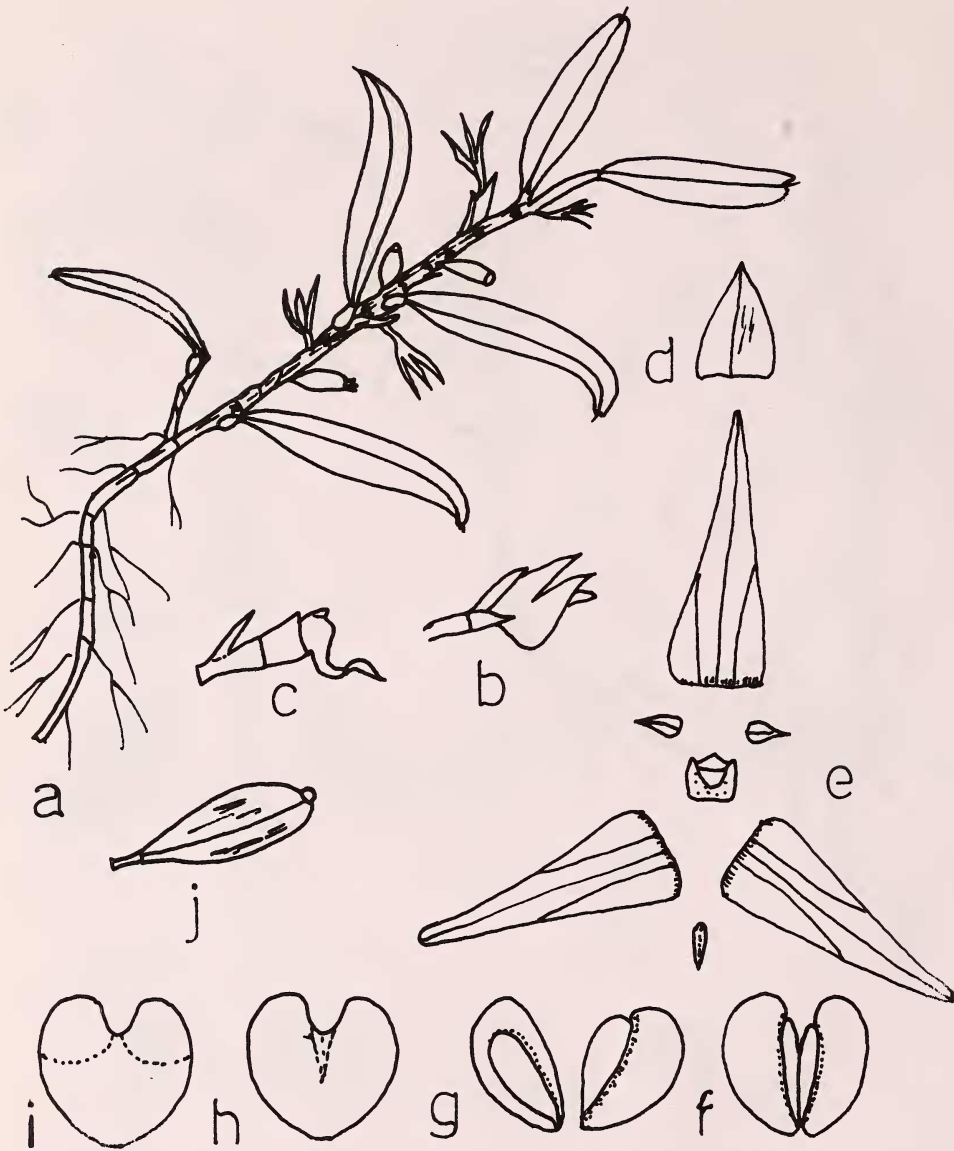


Fig 5. *Bulbophyllum sessile* (Koen.) J.J.S.: (a) habit sketch (x 1); (b) flower from side (x 2); (c) pedicellate ovary, column, foot and lip attached from side (x 5); (d) floral bract (x 5); (e) sepals, petals, lip spreadout, and column from inside (x6); (f) pollinia (x 40); (g) pollinia spreadout (x 40); (h) operculum from front (x 40); (i) operculum from inside (x 40); (j) capsule (x 4).

serving as agents for pollination. They also described the subobliquely ovate- triangular entire petals. but we did not see this character, instead the petal margin was denticulate. According to Pradhan (1979) petals are minute, scaly and ovate-sub-denticulate. On the other hand, Singh (1981) reported that the species as being used as mother plant for many new intergeneric hybrids in foreign countries. Our specimen closely matches with Santapau and Kapadia's (1966) description including the smell of "rotten meat" and the rare flowers under cultivation. These features were also observed in the Orchidarium of Chittagong University, Chittagong, Bangladesh. It is probably the only species which has a foul odour among the Orchids of Bangladesh.

Flowering scape initiation: early November;
Flowering time: Late November - mid December;
Fruiting time: Unknown

Geographical distribution: Malabar (India) and Bangladesh.

Specimen examined: Cox's Bazar district: Ukhia, Koto Palong, 20.12. 1986, Mokter 72.

5. B. sessile (Koen.) J.J.S., Fl. Buit. 6: 44, f. 340 (1905); Holttum, Fl. Malaya, 1: 451 (1964).

Syn. *Epidendrum sessile* Koen., Retz. Obs., 6: 60 (1791); *Bulbophyllum clandestinum* Lindl., Bot. Reg., 27: Misc. 77(1841); Hook. f. Fl. Brit. Ind., 5: 753 (1890); Grant, Orch. Burma, 35 (1895). (Fig. 5)

In Malaya, it is locally abundant as an epiphyte on old fruit trees in rather open places (Holttum 1964). But in this country, it is common as an epiphyte on old trees in deep forest only. The plant is small and pendulous, and difficult to see as it grows on the upper branches, as well as mimic the host plant's colour. Sometimes it grows in aggregated and conspicuous forms, when it is easily seen. **Flowering scape initiation:** Mid August; **Flowering time:** Early September - mid September; **Fruiting time:** September onwards. Flowering considerably varied from early September to mid September.

Geographical distribution: Widely distributed in Indonesia, northwards to Tenasserim, Malaya and Bangladesh.

Specimens examined: Cox's Bazar district: Ukhia, 12.10.1986, Mokter 25; Ramu, Konia Palong, 13.10.1986, Mokter 48; Ramu, Eidghor Reserve Forest, 12.1. 1990, Mokter 150.

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